



PAN AFRICA CHRISTIAN UNIVERSITY

(BACHELOR OF BUSINESS INFORMATION TECHNOLOGY)

END OF TERM EXAMINATION

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: DIT 0221

CAMPUS: ROYSAMBU

COURSE TITLE: INTRODUCTION TO ARTIFICIAL INTELLIGENCE
EXAM DATE: TUESDAY, DATE (6TH APRIL 2021)

TIME: START 2.30PM – 5.30PM

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other THREE questions in Section **B**.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

SECTION A

(Answer ALL questions in this section)

Question 1:

- a) Machine learning is a subset of artificial intelligence from which computing devices can be trained to perform activities that would take humans a while to get reliable results. Distinguish any three learning approaches that can be used to train such “machines”.

(6

Marks)

- b) Artificial intelligence is becoming pervasive in our society as evident in the various technology advancements that seem to outdo the human race in terms of performance. Describe four applications in different fields that have successfully used AI based technologies.

(4 Marks)

SECTION B

(Answer any THREE (3) questions in this section)

Question 2:

- a) Expert agents are some of the components used in intelligent machineries to make-up expert systems. These systems have been the marvel of many at times who are curious on their operation. Give a detailed overview of the workings of such.

(5

Marks)

- b) Some of these intelligent systems need to be trained so as to acquire the expertise they need to perform their functionalities. Briefly describe the components of a learning system that may be employed by such expert systems.

(5

Marks)

Question 3:

- a) Distinguish between hard and soft Artificial Intelligence. (2 Marks)
- a) Describe the following search control strategies:
- i. Heuristic Search (4 Marks)
 - ii. Forward and Backward Search (4 Marks)

Question 4:

b) Describe the following terminology:

i. Neural networks

(3 Marks)

ii. Natural Language Processing

(3 Marks)

c) Outline four important goals of AI.

(4 Marks)

Question 5:

a) Humans consider themselves as intelligent beings and this special quality can be enhanced through knowledge acquisition. Over the years philosophers have created classes in which knowledge may be categorized. Discuss.

(10 Marks)

Question 6:

a) You are the project manager of a new system that is going to be used by the Independent Revenue Audit Authority. The system will use a database which will store a vast amount of monetary audit trails. Explain any two search techniques that may be implemented in the algorithms that may be used by the database designers on your team. (10 Marks)

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